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ABSTRACT

In an effort to test the effectiveness of verbal instruction in diminishing aggressive behavior, eight aggressive preschool children were individually instructed by their teacher on the harm that results from aggression, its lack of effects as an interpersonal strategy, and the benefits that result from prosocial alternatives. The eight subjects were chosen as the most aggressive from a group of 19 children at a privately operated day care center (all 19 children were observed during three observational phases, each phase lasting two weeks). Results from a time-lagged design indicated that aggressive behavior decreased and positive behavior increased as a result of the teacher instructions. Data on maintenance of change suggest that possibility of lasting effects. Overall, findings indicate that individually instructing children can be an effective strategy for modifying social interaction. (Author/SB)

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The Effect of Verbal Instructions on Preschool Children's Aggressive Behavior

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Running head: Effect of Instructions on Preschool Children's Aggression

Abstract

Aggressive preschool children were instructed by their teacher on the harm that results from aggression, its lack of effects as an interpersonal strategy, and the benefits that result from prosocial alternatives. Results from a time-lagged design indicated that aggressive behavior decreased and positive behavior increased as a result of these instructions. Data on maintenance of change suggest the possibility of lasting effects. Overall, findings indicate that individually instructing children can be an effective strategy for modifying social interaction.

The Effect of Verbal Instructions on Preschool Children's Aggressive Behavior

Recent attempts to modify children's aggressive behavior have employed differential reinforcement (e.g., Brown & Elliot, 1965), modeling (e.g., Friedrich & Stein, 1973), timeout (e.g., Clark, Rowbury, Baer & Baer, 1973) and response cost procedures (e.g., Burchard & Barrera, 1972). The present research examined a somewhat different approach to controlling aggression, one that relies on the child's ability to learn from direct verbal instruction. Preschool children were verbally instructed about the harm that results from aggression, its lack of effectiveness as an interpersonal strategy, and the possibility that constructive alternatives, such as cooperating and sharing, would be more effective.

There is reason to believe that verbal instructions can be effective in modifying young children's aggressive behavior. Correlational evidence comes from child rearing studies. Children who behave prosocially are more likely to have parents whose style of discipline emphasizes verbal discussion and the provision of rationales (Aronfreed, 1968; Hoffman & Saltzstein, 1967; Sears, Maccoby & Levin, 1957). Experimental evidence indicates that providing verbal rationales increases children's resistance to touching a forbidden toy (Parke, 1970) and that verbal instruction on complex social skills increases the peer acceptance of socially isolated children (Oden & Asher, Note 1).

Still, there has been little experimental investigation of the effectiveness of verbal instruction in modifying young children's aggression. An exception is a study by Chittenden (1942) conducted over thirty years ago. Preschool children's "dominative" (aggressive) and "integrative" (cooperative) behavior was observed in a structured play situation. Children then met individually with the experimenter for eleven sessions. In the first session the child was introduced to two dolls, referred to as "Sandy" and "Mandy". In the next ten sessions, the

characters faced a series of limited resource situations which required them to play with a single toy. Initial sessions served to teach the children to discriminate unhappy outcomes, such as fighting, anger, etc., from happy outcomes, such as sharing, having a good time, etc. In later sessions, the dolls sometimes played successfully, thereby modeling appropriate behavior. At other times the dolls fought and the experimenter and child discussed possible ways of resolving conflicts the dolls faced. In still later sessions the child was asked to show the dolls what they could do to play more successfully. More than a week after training, children were again observed in the specially designed play situation. Results indicated that the trained children significantly decreased their amount of aggressive behavior. They also increased in their level of cooperative behavior but the increase was not statistically significant. A control group of children who received no training did not change from pretest to post-test on either measure.

The present research differed from Chittenden's in three respects. First, the training consisted entirely of verbal discussion between the child and the instructor. No doll play or other modeling components were used. The purpose was to learn whether verbal instruction alone would reduce aggressive behavior. Second, the training was carried out by the day care teacher rather than by an experimenter. This was done to learn whether the treatment program executed by a teacher in the course of daily events would be effective. Finally, the most aggressive children were trained rather than the entire class as in Chittenden's study.

Method

Research Setting. Nineteen children, 13 boys and 6 girls, were observed in a privately operated day care setting in Urbana, Illinois. The majority were children of university faculty or graduate students. Of the 19 children, 16 were from the United States, one from Japan, one from India, and one from Argentina. The children ranged in age from three years to five years, six months with an average age of three years, nine months.

To facilitate observation children were randomly assigned to two play groups. One group had 10 children and the other had 9 children. During these play sessions children played with blocks, invented their own active games, or played "house". To facilitate social rather than isolated play, no crayons or books were provided. Besides the observer, a teacher-aide was present during these sessions. All play sessions were held on Monday, Wednesday, and Friday from 3:30-4:30 p.m. Each group of children were observed 3 times during each two-week observational phase.

Research Design. A time-lagged design was employed (Gottman, McFall & Barnett 1969). Baseline observations were made and the eight most aggressive children were identified. Four of the eight children, randomly selected, were instructed and the other four received no instruction. Observations were once again made of all the children in the center. Next, the remaining four children were instructed and final observations were made on all of the children. This design is analogous to a multiple-baseline design. By "lagging" the intervention the design ensures that any changes that occur are due to the treatment rather than maturation, historical events, or regression effects. It also avoids the ethical disadvantage of withholding treatment from some children. While an A-B-A-B design can sometimes meet these design considerations it was not regarded as feasible for the intervention used here. The expectation was that behavior would continue at a reduced level after instruction rather than revert to the baseline level. Presumably, children who are verbally instructed learn general concepts or rules which continue to guide their social interactions.

Although the focus of the experiment was on the more aggressive children all children in the center were observed throughout the experiment. It was therefore possible to learn whether the behavior of initially low-aggressive children was stable over time.

Observation Categories. The observation system consisted of three categories: aggression, positive active behavior, and inactive behavior.

1. Behavior was categorized as aggressive if a) a child physically aggressed (e.g., hit, pushed, kicked); b) verbally abused another child (e.g., shouted at, insulted); c) pulled a toy away or physically resisted sharing it; or d) engaged in playful fighting (e.g., playing the role of the wicked witch who hits all of the children and screams at them).
2. Positive active behavior included a) playing cooperatively with at least one other child, b) talking with others, and c) playing alone.
3. Inactive behavior included a) passive observation of others, b) resting alone, and c) daydreaming.

Observation Procedure. There were three observational phases of the experiment. All children were first observed to assess pre-training levels of aggressive behavior. All children were again observed after half of the aggressive children had been instructed. Finally, observations were again made on all children after the second group of aggressive children had been instructed. Each observational phase lasted two weeks and each play group met three times during that period.

Data were collected using an interval scoring procedure. The observer located the first child on the list and within a six-second interval observed and categorized the child's behavior. The observer then proceeded to the next child on the list. Sequential observation approaches such as this have been found to produce less error than other time sampling strategies (Thomson, Holmberg, & Baer, 1974).

During each play session the observer went through the entire list of names 40 times. Given three play sessions during each observational phase there was a possible total of 120 observations per child in each phase of the experiment.

A criterion of 40 observations per child for each observational phase was established as a basis for including a child's data. Two of the nineteen children were repeatedly ill and their data were not used.

Interrater Reliability. To assess reliability of the recording procedure, a second person observed the children's behavior for an entire play session. The interobserver agreement was 92 percent using the formula:

$$\frac{\text{Number of agreements}}{\text{Number of intervals}}$$

Selection of Children to be Instructed. Eight children who had the highest percentage of aggressive behavior in the pre-training period were selected. All eight children were boys. Four pairs were then formed by matching children according to their percentage of aggressive behavior and one child from each pair was then randomly assigned to one of two groups. A list of the two groups of children was given to the teacher and she randomly selected one group to be instructed first. The observer was unaware of which group of four children were instructed first.

Training Procedure. The teacher was given a detailed explanation of the purpose of the study and the purpose of the training. She was given a script and practiced thoroughly at home before the training.

The teacher instructed each child individually on one occasion for approximately 10 minutes. She brought the child to a quiet and relatively isolated part of the school and engaged him in conversation aimed at teaching three concepts: a) aggression hurts another person and makes the person unhappy, b) aggression does not solve problems and only brings about the resentment of the other child, and c) positive ways to solve conflicts are sharing, taking turns, and playing together. Each concept was taught by asking the child leading questions and encouraging the desired response. The teacher varied the exact wording depending on the

child's response. Additional prompts were provided if the child did not respond. If the response was not forthcoming the teacher finally stated the desired response.

An example of the procedure follows:

a) Concept 1. Aggression hurts another person and makes him sad.

Teacher: What w. . a child do if you take his toy and if you scream at him?

Child: He will be unhappy.

Teacher: Do you remember what you did when somebody hit you?

Child: I cried.

Teacher: Can you enjoy playing and can you have fun when you are unhappy?

Child: No.

Teacher Summarizes: When we play we all want to be happy and to have fun. When we are unhappy because another child hit us and shouted at us we cannot have fun. So we should not shout and hit and take toys from other children because then they would not be able to have fun.

b) Concept 2. Aggression does not solve problems and only brings about the resentment of the other child.

Teacher: After you hit another child does he give you the toy you wanted?

Child: No, he will hold his toy.

Teacher: After you shout at a child does he play nicely with you?

Child: No.

Teacher: What happens to a child who always takes toys from the other children? Do the other children want to be his best friend?

Child: He won't be their best friend.

Teacher: Do you think this child will be happy at school and will have lots of fun playing in school?

Child: No.

Teacher Summarizes: You should not hit and should not take other children's toys because that does not help you at all. They won't give you the toys when you shout. The children won't be your best friends and they won't like to play with you. So you won't be happy at school.

c) Concept 3: Positive ways to solve conflicts are sharing, taking turns, and playing together.

Teacher: Suppose you play with blocks with a friend and you both want to have a good time. What should you do?

Child: Share the blocks.

Teacher: Suppose you have just one truck and you both want to play with it and have fun. What can you do?

Child: You should take turns playing with the truck.

Teacher: Suppose you have just one doll or just one teddy bear and both you and your friend want to play with it, what can you do?

Child: You can play house. One of you will be the mother and the other will be the father.

Teacher Summarizes: If you want to have fun playing with a friend and want your friend to be happy, too, you should share, take turns, and play together. Then everybody will be happy, and we will have lots of fun in school.

Check on Training Procedure. Two judges listened to tape recordings of the instructional sessions. For each child the judges indicated the extent to which the teacher adhered to the instructional procedure. Both judges indicated that the procedures were carried out properly in all eight sessions.

Measures. Three measures were calculated for each of the 18 children for each of the three observational phases: aggression, positive active, and inactive.

Each measure was the percentage of observation intervals in which the type of behavior occurred. Thus, for each child, within each observational phase, the three measures sum to 100 percent.

Results

Table 1a presents the percentage of aggressive behavior for children in the group instructed first (Group A) and the group instructed second (Group B). Also presented are data for the ten non-aggressive children. Group A's aggressive behavior declined from 21% to 10% between Time 1 and Time 2. Two weeks later at Time 3, 10.8% of their behavior was classified as aggressive indicating that the decrease in aggressive behavior was maintained two weeks after instruction.

Group B children were instructed after the second observational phase. Thus changes in their behavior would be expected to appear between Time 2 and Time 3 and not between Time 1 and Time 2. The results indicate that the average level of aggression was 25.1% at Time 1, 21.8% at Time 2 and 12.4% at Time 3. Thus, the largest decline in aggressive activity of Group B occurred after they were instructed. From these data it appears that the changes that occurred were related primarily to the intervention rather than other time-related effects.

The data for non-aggressive children indicate whether the children initially identified as less aggressive remained low. It can be seen that the average percentage of aggressive behavior was stable and low across observational phases. It was 3.3% at Time 1, 2.6% at Time 2 and 2.3% at Time 3.

An important issue is whether decreases in aggressive activity were accompanied by increases in positive activity. Data on this issue are presented in Table 1b. For Group A, positive active behavior increased from 78.8% at Time 1 to 87.9% at Time 2. The level at Time 3 was 89.2% indicating that the effect of verbal instructions was maintained over time. For Group B positive active

behavior increased from 73.4% to 77.8% between Time 1 and Time 2. The level at Time 3, 87.3%, indicates that the largest gain occurred after instruction. Thus, both Group A and Group B showed the largest changes in amount of positive active behavior immediately following the teacher's instructions.

Table 1b also shows the level of positive active behavior for initially less aggressive children. It is quite high and quite stable (range 92.5 - 95.3%) across the three sessions.

The level of inactive behavior is presented in Table 1c. This type of behavior remained essentially the same across all three phases of the experiment for Group A, Group B, and the initially less aggressive children. An interesting finding is the very low percentage of inactive behavior. The aggressive children (Groups A and B) were inactive only about 1% of the time. The initially less aggressive children also show a low level of inactive behavior, averaging about 4%, which was stable across time.

For the purpose of statistical analysis, the data for all eight aggressive children were pooled. Group A and Group B children are similar insofar as Time 1 is the baseline period for all eight children and Time 3 is a post-training phase for all eight children. T-tests comparing Time 1 and Time 3 performance indicated that the eight initially high-aggressive children changed significantly on aggressive behavior, $t(7) = 2.37$, $p < .05$, and on positive active behavior, $t(7) = 2.54$, $p < .05$. Their level of inactive behavior did not change over time, $t(7) = 1.48$. Data from the ten low-aggressive children were also compared across the first and last sessions. On none of the three measures were differences across time significant.

Discussion

The results provide evidence that verbal instructions can alter the social interaction of preschool children. The children who were instructed significantly decreased in their level of aggressive behavior. Given the time-lagged design employed it can be reasonably assumed that the behavioral changes effected were due to the instructional procedure rather than coincidental occurrences in the center, maturational changes, or regression effects. The behavioral data followed the intervention sequence with children changing the most immediately after they were instructed. The fact that the initially low aggressive children's behavior remained stable over time also testifies to the absence of regression effects.

The finding that the decrease in aggressive behavior was accompanied by an increase in positive activity rather than an increase in isolated or withdrawn behavior is in itself encouraging, especially since research using differential reinforcement has found that decreasing aggressive activity does not inevitably lead to increases in positive forms of behavior (Pinkston, Reese, LeBlanc & Baer, 1973). The instructional emphasis on the value of prosocial alternatives (e.g., sharing, taking turns) as well as emphasis on the harmfulness of aggression undoubtedly contributed to the effect. Focusing only on the negative consequences of aggression would probably not have been as successful. Future studies might dismantle the instructions used here to learn which elements or combinations of elements in the instructions were effective.

The present findings are significant in that they suggest that teachers can be effective instructors of social behavior. Previous social skill training studies with children (Chittenden, 1942; Oden and Asher, Note 1) had the experimenter serve as an instructor. Whether the teacher is more effective than a relative stranger is not addressed by the data here. What is important is that the

instructional procedure used required little training and was easily implemented by the teacher.

An interesting issue is why the provision of rules and concepts was effective. A number of previous studies have examined the effect of teacher-stated rules to the entire class and found that the provision of classroom rules alone has little effect (e.g. Madson, Becker & Thomas, 1968). One possibility is that children hear general classroom rules so often that they tend to disregard them, particularly if there are no immediate consequences for compliance. In the present study the teacher met individually with each child. This ensured that the child was attending to the instructions. Also, the individualized presentation of rules and rationales may have increased committment to the rules. The teacher seemed to be well-liked by the children. By holding individual sessions with each child, the children may have felt greater pressure to comply to gain approval. Another possibility is that children in the present study felt more involved in formulating the rules. The teacher made an attempt to be inductive wherever possible by including the child's ideas in the process of formulating rules.

One question for further research is whether the instructional procedure would be effective with different types of populations. Most of the children in this study came from highly educated families. It is plausible that the children's learning history included frequent experience with verbal modes of discipline. Children with different histories and different language skill levels might at the outset be less amenable to brief instructional interventions.

Another issue for future research is whether additional components such as modeling or the opportunity for rehearsal would strengthen the impact of training. Inspection of individual data (Zahavi, 1973) indicates that most but not all of the eight children showed impressive gains. Social skill training studies with

adults have found that the addition of an opportunity to rehearse or practice new behavior can be of particular value (McFall & Twentyman, 1973).

Finally, there is a need for long term follow-up research on the effects of social skill training with aggressive children. If, as hypothesized, children are learning general rules to guide their behavior, long-term effects would be expected. The time-lagged research design in the present study provides information on one group two weeks after training as well as immediately following training. While this hardly constitutes long-term assessment, the results are encouraging. The children instructed first remained less aggressive over a two-week post-training period.

Reference Note

1. Oden, S. L. and Asher, S. R. Coaching children in social skills for friendship-making. Paper presented at the biennial meeting of the Society for Research in Child Development, Denver, 1975.

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Footnotes

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Table 1

Average Percentages of Aggressive, Positive Active, and Inactive Behavior

Groups	Time 1	Time 2	Time 3
		(a) Aggressive Behavior	
Instructed First (A)	21.0	10.0	10.8
Instructed Second (B)	25.1	21.8	12.4
Non-Aggressive	3.3	2.6	2.3
		(b) Positive Active Behavior	
Instructed First (A)	78.8	87.9	89.2
Instructed Second (B)	73.4	77.8	87.3
Non-Aggressive	93.2	92.5	95.3
		(c) Inactive Behavior	
Instructed First (A)	0.2	2.1	0.0
Instructed Second (B)	1.4	0.4	0.3
Non-Aggressive	3.5	4.9	2.4